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IS THE VALUE OF OUR FAST CRUISERS OVER-ESTIMATED?

BY REAR-ADMIRAL DANIEL AMMEN, U. S. N.

YEARS ago, when the building of fast cruisers was begun by us, the then Secretary of the Navy made a comparison of the destruction effected by the Confederate cruisers in our civil war with what might obtain through our superior means of destruction, should we have a war with a commercial power. Let us see how far a comparison will hold good :

The Confederate cruisers were wooden vessels of some twelve hundred tons displacement, and had sail power through which they could make long voyages at a fair rate of speed without the use of coal. In crossing calm belts, near the equator or elsewhere, a few tons of coal would expedite them greatly, or, when a vessel was sighted, would enable them to overtake her, and if she carried our flag, they seized whatever they desired, took the crew on board, burned the vessel, and landed her crew at the most convenient time. With the favors that were shown these cruisers, surreptitiously and openly, in British ports, to which they always went when convenient, in whatever sea, their coal and other supplies were kept up. Ocean telegraphy had not the same extension as now. They committed ravages in one region, then would sail to another, choosing a sailing route where, under the prevailing winds, a concentration of vessels might be expected, and there reenact their destructive purposes, and then set sail again for some distant point on some other route where they were likely to find their prey. Under such conditions they were capable of effecting great damage and avoiding the few vessels that were sent after them. At length the "Alabama" was willing to risk a combat with the

“Kearsarge” off Cherbourg, and then there was one Confederate cruiser less.

It is now more than twenty-eight years since the close of the civil war; the mode of propulsion and the speed of merchant steamers have undergone a great transformation, and the routes of traffic of greatest value have changed. Although for some years and at this time the aggregate tonnage of sailing vessels has been steadily augmenting relatively to steamships engaged in ocean traffic, sailing vessels of belligerents would naturally be laid up in the event of war, as would a large proportion of ocean steam tramps of the nations engaged. Their traffic in cargoes not liable to seizure as contraband would pass to neutral flags. Should we have a war with any considerable power other than Great Britain, we would find that increased war rates of insurance would throw almost the entire traffic on the high seas of both combatants under the British flag. In Asiatic waters France would have steamers from her Mediterranean ports, probably not many in number; they would run little risk of capture by our cruisers, had we unhappily a war with that power. Cable dispatches would give information of the proximity of hostile vessels and enable the steamers either to remain in port or to be convoyed by fast vessels-of-war.

In a war with Great Britain our fast cruisers would be subject to grave disadvantages. An examination of “Coaling, Docking and Repairing Facilities of the Ports of the World, 3d Edition, 1892,” published by the Navy Department, will show how illusory is the idea that our fast cruisers could seriously affect the merchant flag of Great Britain in distant seas, where neutrality laws would estop coal supplies, and dockage to clean their bottoms, in neutral ports. The docking and coaling facilities set forth in the document referred to, if marked on a chart of the globe, show how conveniently the cruisers and the battleships of Great Britain can reach out in all directions with clean bottoms and full coal bunkers. This favorable condition could not obtain for any other power, even should all neutrals fail to observe their neutrality obligations. We may assume that our fast cruisers are the equals of those of any other power, and probably a few are superior, especially those with triple screws. Regarding the map of the globe and the British coaling stations marked thereon, we perceive that had we a much greater number

of the best of cruisers, the probable results of their visiting distant seas would not be satisfactory, as I propose showing in the following pages, through the opposing forces that Great Britain would have, scattered far and wide over the seas. Our cruisers, doubtless, have as high a rate of speed as those of Great Britain; there is no reason to suppose that the results of the speed trials, as given, are not exact; yet, only a novice will have the idea that they will represent the normal speed on the high-seas. Contractors take care that nothing is omitted to make the speed all that is possible, with bottoms perfectly clean, picked coal, and the employment of the most expert firemen, with forced draught. It is well known that considerable repairs are frequent after speed trials, from taxing the machinery and boilers to their utmost, and perhaps injuries result that do not come to light for some time. A forced draught is so destructive to boilers when inexperienced firemen are employed, that only a few hours steaming may seriously impair them. Captain Evans stated that when in command of the "Baltimore" in the Behring Sea, he ordered a forced draught in order to overtake a vessel before dark; as a result the boilers had 500 leaky tubes. The British fleet operations give analogous results. A British admiral has recently styled a forced draught a device of the devil. The question may occur why vessels of war cannot or do not use forced draughts as well as ocean liners. The latter have the best firemen obtainable; if one lacks in intelligence or usefulness he is discharged at the earliest opportunity; in the naval service he cannot be discharged for ordinary incompetency—nor can he be schooled to competency. It is gratifying to see that Engineer-in-Chief Melville suggests lengthening the smokestacks to create a stronger natural draught and dispensing with the use of forced draughts, as has been done on board of the "Campania" and the "Lucania," the ocean liners that have made the shortest runs across the Atlantic.

There is not one of our fast cruisers that can profit to any extent by the use of sail power even in strong winds, although their enginery enables them to attain a high rate of speed, with a correspondingly large coal consumption. As already stated, the "Alabama" and other Confederate cruisers did very well under a low head of steam; in fact, they did not require a large coal consumption when steaming ten knots an hour, which was at that

time sufficient for their purposes. In trade-winds or other breezes abeam, or abaft the beam, they would readily sail more than ten knots per hour. A modern fast cruiser on an unfrequented sea, with disabled machinery or without coal, would be as pitiable an object as can well be conceived. Her crew would hail the appearance of an enemy in war as a much needed friend.

Our navy does not possess one sheathed vessel of war; after a few months in tropical waters our fastest cruiser would be slow indeed. If twenty knots was obtained on the speed trial, with the same number of revolutions it would probably not exceed fourteen knots. This great falling off can be verified by an examination of logbooks. Ten years ago I was given specimens of barnacles taken from the bottom of the "Ranger" that had spent seven months, after a previous dockage, in voyages to and from the coast of Mexico and in making surveys. Barnacles more than an inch long covered the entire bottom, and a heavy marine vegetable growth supplemented the barnacles. Her voyage to San Francisco was at less than half the speed, with the same number of revolutions per hour as when she left with a clean bottom.

Eighteen years ago, when the construction of half a dozen iron vessels was discussed at the so-called Board meetings of the chiefs of bureaus, presided over by the Secretary of the Navy, the late Rear-Admirals Case, Reynolds, C. R. P. Rodgers, and myself insisted that some of the vessels should be sheathed. The Chief of Bureau of Construction craftily replied, "That could be done afterward." He was an "expert," and we were supposed to know nothing as to what should be done in turn in the progress of construction. To sheathe a vessel after her construction would require tearing her to pieces in a great measure.

In all metallic constructions of ships subject to salt water navigation a marked galvanic action sets in, to the steady destruction of the metal for which the action has most affinity. A few years ago the British armored ship "Warspite" was docked at Esquimaux for the purpose of remedying defects in putting on her copper sheathing. It was said that there were metallic connections, through nails or otherwise, between the sheathing and the ship's iron bottom, resulting in serious injury. The actual details of the supposed neglect or mistake never came to me. Of all metals in common use, zinc is the most subject to destruction, the other

metals remaining unaffected by galvanic action in connection with it, and zinc taking "the bite." I have suggested to experts the possible advantage of sheathed vessels having a strip of zinc of two feet in width put round the vessel, extending from a few inches below the water line to more than one foot above it. If fastened to the hull above and below with suitable metallic battens, the zinc could be renewed readily as might be required.

In looking over the *Naval Annual*, of Lord Brassey, an American may well be startled at the array of vessels-of-war of Great Britain, from battleships to torpedo gunboats. In order to approximate as to the value or the worthlessness of the major part of these vessels, I endeavored to classify them. Of seventy-nine armored vessels, eight are sheathed with copper and five with zinc; eighteen were built prior to 1870, and twenty-one more before 1880. Should all of these thirty-nine vessels be regarded only as naval scarecrows, thirty-three yet remain built since that time or are near completion.

Of unarmored cruisers there are sixty-two with iron or steel bottoms, forty-nine others are sheathed with copper and two with zinc. Twenty-one others are composite, of various sizes, all of them above 1,000 and some of them over 2,000 tons displacement. They have iron or steel frames, wooden bottoms, and copper sheathing. No note was made by me of minor vessels, nor of those belonging to the colonies. Of the total, twenty-four were built prior to 1880, twenty-four from 1880 to 1885 inclusive, and seventy-seven from that date to the present, some of them not yet completed. Of the total a rough estimate gives 100 which may be supposed available cruisers for any part of the world as commerce destroyers.

In addition to the above force for commerce destroyers and against hostile cruisers are twenty-three merchant vessels to be fitted out in event of war. The shortest of them is 420 feet in length. Four of them have an average speed at sea of more than nineteen knots, and the remainder have good ocean speed.

Rapid firing guns have been introduced into all navies within the past thirty years, and, in my belief, will prove a surprising factor in naval warfare where crews are not protected by armor of sufficient thickness to resist the penetration of three, six, and twenty pound projectiles thrown from rapid-fire guns. These steamers that may be drafted in service, and others, while en-

gaged in traffic can probably be more effectively armed with a number of such guns than with heavy batteries. Half a dozen six-pounders put on the stern of a vessel endeavoring to escape, directing their fire particularly at the smokestacks of her pursuer, would probably riddle and tear them to pieces, by carrying away whole sheets on the farther side, at a distance of more than three thousand yards, and otherwise inflict great damage to even the typical fast cruiser. At a distance of more than two thousand yards six-pound projectiles are capable of piercing conning towers of three inches thickness of iron. They could sweep the decks of a large number of ventilators, sending them flying in fragments as missiles, killing and wounding the guns' crews of the main battery that could not be served with the same accuracy at the same range. Six pounders, fired from the shoulder, admit of the same accuracy of aim as ordinary small-arms, even in a moderate seaway, when a heavy gun would be fired with great inaccuracy. Of course the fast cruisers have rapid-fire guns. It seems to me that their combats will be settled in a larger degree with their rapid fire than with their heavy guns.

From these considerations, there seems little prospect of great success on the high-seas in the capture of British merchant vessels by whatever nation, should she be engaged in war. Modern fast cruisers have not that kind of endurance and ability to keep the sea for months that belonged to the Confederate cruisers and ours of that period.

To those who think that the world is made up of adulators and fault-finders I would say that we should be content as a whole with our fast cruisers. They will serve purposes in war that could not be dispensed with without grave disadvantages. Were all of our battleships that are now under construction, completed, and the number doubled, we still, in my belief, would have undefended coasts, so far as the navy should serve as an indispensable auxiliary to fortifications and for its own purposes. The Bureau of Construction has not shown the prescience that was claimed for it in advance of execution. Ships have been found deeper in the water than was desired; others are said to be top-heavy. A battleship constructed on plans said to have been surreptitiously obtained from a British firm at considerable cost has not the necessary structural strength from a lack of sufficient material, which seems remiss, inasmuch as iron and steel

are abundant and cheap. Upon other cruisers and battleships yet untried, the gilded rays of hope and pride yet remain, perhaps now, with a certain amount of apprehension that all modifications in design may not prove to be improvements.

There are some of our countrymen that in naval and in other matters set their hopes of success in closely following the footsteps of the British ; as the sunflower turns its face to its god, morning, noon, and when he sets, so do they keep their faces reverently and hopefully turned to Britishers for personal and professional inspiration. They are oblivious to the fact that for half a century Great Britain and other European powers have adopted largely American ideas in naval construction and armaments. They may be known by their mutton-chop whiskers and their British accent and dress—more readily acquired than British ideas. Yet as I write, there lies before me the morning paper, and in it appears that “the trials of the new British cruiser ‘Theseus’ yesterday were not satisfactory !” Let us console ourselves sympathetically that Great Britain has made a great many blunders in her naval constructions. Why should we not throw the mantle of charity over ours ? We should not flatter ourselves, as the ignorant are prone to do, with the belief that one of our battleships is the equal of two of an enemy. It is a fair presumption that, ship for ship, they should be the equal of any force. Were our naval fighting force doubled and concentrated at one port on the Atlantic and another on the Pacific, there are several European powers that could send double the number of our vessels in either port from their normal force to attack us, and leave still a larger contingent at home.

We have coasts on the Atlantic and on the Pacific, each of thousands of miles of extent, and bays and inlets from which the entrance of an enemy cannot be estopped by fortifications. The navy should be able to drive him away or to destroy his ships of whatever type. A letter by me to the Secretary of the Navy will be found in the appendix to his report of 1883. It stated briefly what I had to say on the subject of coast defence at that time. Recently I have expressed the same ideas more at length in *The Old Navy and the New*. As an indorsement and warrant for them, as regards the best and most effective arm for our naval coast defence, the recent writings of Lord Armstrong may be read with interest, the more as Sir Edward Reed, for many years

the chief naval constructor for the British Admiralty, and now a member of the House of Commons, and two other members and eminent shipbuilders, Mr. Alan and Mr. Harland, support the same ideas. In the London *Times* of November 18, Admiral Elliot, a distinguished officer of the British Navy, gives also his unequivocal support to the utterances of Lord Armstrong, which are clear and unmistakable in expression, that battleships and the various classes of vessels-of-war of Great Britain will not meet the necessities of the situation. He states that Great Britain should have marine rams pure and simple, built for that special purpose ; that the supposed protection of any vessel from ramming through any thickness of armor was a fallacy, as I have said for the past fifteen years.

I entertain the same idea that was expressed by the late Rear-Admiral C. R. P. Rodgers not long before his death : That should Great Britain be disposed to make war upon the United States, it would be in a sudden dash with all her forces to demand enormous ransoms from our unprotected cities and coasts, or effect so widespread a ruin as to appal us into an immediate submission to any terms she might propose. This idea could not be entertained for a moment should we provide the means for coast defence suggested in the papers above referred to. There is a passive, yet very weighty, consideration which British statesmen may well regard. Even a non-intercourse between the two countries for a few months would reduce the British masses to great misery, and, were the period of its continuance indefinite, to actual despair. With us, the masses would not suffer want in any degree, but there would be heavy taxes, discomfort, and, perhaps, great losses inflicted on personal property, much of which would be British, and certainly a great deal of national humiliation should we fail to make our preparation for a war, before it was rudely thrust upon us.

The centres of maritime power of Great Britain, belting the world, and forbidding any reasonable prospect of the United States or other power preying upon her merchant marine, should be regarded rather in a spirit of gratulation than the reverse, by all peoples who speak the same language. These centres of maritime power are no less the centres of a widespread manly civilization ; it is only on placing a map of the world before you and regarding carefully the areas of continents and of islands, where

kind and thoughtful mothers teach the same language to their children, that the fact can be appreciated in its full significance, that a great family is widely spread over the earth, to work out a great destiny. In families, in groups, and singly, for centuries the founders of these centres have left their homes as emigrants, with tears in their eyes, yet with strong arms and brave hearts, to meet hardships and to found homes and hearthstones for themselves and their offspring; and we see how well they have done it—this great family, now so widely spread, is yet in its merest infancy as regards numbers, wealth, and power. Of the many millions with hearthstones so far apart, whose mothers teach them their duties to their God and to man, not one should be so thoughtless as to fail in sympathy of kinship towards all. In one of his annual messages to Congress, President Grant expressed, very happily and concisely, his ideas of the growing importance of the language that finally to a great degree would serve as a common means of communication for the many diverse tongues of the human race.

Far be from me, or from a vast majority of my countrymen, to wish to see the maritime power of the mother-country seriously impaired. While it may be her pride, and sometimes a rather distasteful boast, it is a heavy load to bear; it is her necessity—all who speak her language and are gifted with a sentiment of kindness may wish and hope to have her endure it until the preponderance of her offspring, scattered over the wide world, may give her that moral and material support that will suffice to aid in her protection from envious enemies who may wish to assail her.

DANIEL AMMEN.